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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,848	06/24/2003	Yoshinori Tanaka	1324.68109	9315

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EXAMINER	
CHEN, WEN YING PATTY	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 04/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/602,848	TANAKA ET AL.	
	Examiner	Art Unit	
	Wen-Ying P. Chen	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-15 and 17-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-15 and 17-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 June 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/607,104.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's Amendment filed Feb. 2, 2006 has been received and entered. Claims 18-20 are newly added per the Amendment filed. Therefore, claims 13-15 and 17-20 are now pending in the current application.

Drawings

Figures 28-31 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13-15 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimomaki et al. (US 6678017).

With respect to claim13: Shimomaki et al. disclose in Figure 1 an active matrix type liquid crystal display comprising:

a switching element (element 8) formed for each of a plurality of pixels defined by a plurality of bus lines (elements 9 and 10);

a short ring (element 12) connected to the plurality of bus lines; and

an electrostatic protection element (elements 13, 14) formed between each of the plurality of bus lines and the short ring;

wherein the electrostatic protection element portion comprises a plurality of metal layers (Figure 6, elements 55-57) directly formed on the same layer, an insulating layer (Figure 8, element 41) formed on the plurality of metal layers, a contact hole (Figure 8, element 63) formed by opening the insulating layer on the plurality of metal layers, and a connecting layer (Figure 8, element 67) electrically connecting the metal layers via the contact hole.

With respect to claim14 (Amended): Shimomaki et al. disclose in Figure 1 an active matrix type liquid crystal display comprising:

a switching element (element 8) formed for each of a plurality of pixels defined by a plurality of bus lines (elements 9 and 10);

an electrostatic protection element (elements 13, 14) formed between the adjacent bus lines;

wherein the electrostatic protection element portion comprises a plurality of metal layers (Figure 6, elements 55-57) directly formed on the same layer, an insulating layer (Figure 8,

element 41) directly formed on the plurality of metal layers so as to completely cover surfaces of the plurality of metal layers, a contact hole (Figure 8, element 63) formed by opening the insulating layer on the plurality of metal layers, and a connecting layer (Figure 8, element 67) electrically connecting the metal layers via the contact hole.

As to claim 18 (New): Shimomaki et al. further disclose in Figure 8 that the insulating layer (element 41) is a single layer.

As to claim 19 (New): Shimomaki et al. further disclose in Figure 8 that the connecting layer (element 67) is a single layer.

As to claim 20 (New): Shimomaki et al. further disclose in Figure 8 that the connecting layer (element 67) is formed by a material for a pixel electrode formed in each of the plurality of pixels (Column 10, lines 16-23; wherein ITO is used for forming pixel electrodes and the connecting layer).

With respect to claim15: Shimomaki et al. disclose in Figure 1 an active matrix type liquid crystal display comprising:

a switching element (element 8) formed for each of a plurality of pixels defined by a plurality of data bus lines (element 10) and gate bus lines (element 9);

a first common wiring (element 19) connected to the data bus lines;

a second common wiring (element 17) connected to the gate bus lines; and

an electrostatic protection element (elements 13, 14) formed between the first common wiring and the second common wiring;

wherein the electrostatic protection element portion comprises a plurality of metal layers (Figure 6, elements 55-57) directly formed on the same layer as the first common wiring or the

second common wiring (Figure 6 shows that the metal layer are formed on the same layer as the first common wiring), an insulating layer (Figure 8, element 41) formed on the plurality of metal layers, a contact hole (Figure 8, element 63) formed by opening the insulating layer on the plurality of metal layers, and a connecting layer (Figure 8, element 67) electrically connecting the metal layers via the contact hole.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimomaki et al. (US 6678017) in view of Kim (US 6087678).

Shimomaki et al. disclose in Figure 1 an active matrix type liquid crystal display comprising:

a switching element (element 8) formed for each of a plurality of pixels defined by a plurality of bus lines (elements 9 and 10);

an electrostatic protection element (elements 13, 14) having a multi-layer structured metal layer (Figure 6, elements 55-57);

an insulating layer (Figure 8, element 41) formed on the metal layer;

a contact hole (Figure 8, element 63) formed by opening the insulating layer on the metal layer; and

a connecting layer (Figure 8, element 67) electrically connecting the metal layers via the contact hole.

Shimomaki et al. fail to disclose that the multi-layer structured metal layer comprises a top layer which is partially removed and an under layer directly below the top layer is exposed such that the connecting layer is connected to both the top layer and the under layer of the metal layer.

However, Kim teaches in Figure 6 and Column 5 lines 45-48 and Column 6 lines 35-48 that the metal layer (element 41b) is formed of a top layer (element 40) and an under layer

(element 38) such that the top layer is partially removed and the under layer below the top layer is exposed and both layers connected to the connecting layer (element 44a).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to construct a liquid crystal display device as taught by Shimomaki et al. wherein the top layer which is partially removed and an under layer directly below the top layer is exposed such that the connecting layer is connected to both the top layer and the under layer of the metal layer as taught by Kim, since Kim teaches that it is preferable to form multi-layer electrode layers such that in the case the bottom layer is of a low resistance contact and the top layer of a low resistivity layer, the top layer is etched to expose the bottom layer when connecting with a connecting layer so that the connecting layer is in direct contact with the bottom layer which is less susceptible to metal migration, thus a high quality and reliable contact is formed and the overall effective resistance of the electrode is maintained at a low level (Abstract, Column 5, lines 45-48 and Column 6, lines 35-48).

Response to Arguments

Applicant's arguments, filed Feb. 2, 2006, with respect to the rejection(s) of all claim(s) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Shimomaki et al. (US 6678017) as set forth above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Ying P. Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wen-Ying P Chen
Examiner
Art Unit 2871

WPC
4/10/06

ANDREW SCHECHTER
PRIMARY EXAMINER